

REMARKS

In the Office Action dated June 1, 2005, the Examiner objected to claims 1-7, 7 and 12 because of a lack of antecedent basis for the term "said x-ray detector." This objection has been overcome by amending claim 1, line 4 to use the term "an x-ray detector" at that location, thereby providing antecedent basis for all subsequent occurrences of "said x-ray detector."

Additionally, claims 1-25 were rejected under 35 U.S.C. §102(e) as being anticipated by Verdonck et al. This rejection is respectfully traversed for the following reasons.

Independent claims 1 and 13 require that, either as a method step or by the operation of the control unit, the x-ray source and the x-ray detector move along a curved path in the longitudinal direction that substantially corresponds to the curved geometry of the subject. At page 3 of the Office Action, the Examiner stated that the Verdonck et al. reference discloses moving the x-ray source and the x-ray detector along such a curved path, however, the Examiner did not provide any citations to the disclosure of the Verdonck et al. specification or drawings to substantiate this position. Applicant respectfully submits that the Verdonck et al. reference does not provide any such disclosure, or any suggestion to move the x-ray source and the x-ray detector along such a curved path.

Figures 3 and 5 of the Verdonck et al. reference show successive positions of the x-ray source 1 and the x-ray detector 2 for obtaining images of the spinal column of an examination subject. Although the entries for the positions shown in Figures 3 and 4 are not precisely linear, there is no disclosure in the Verdonck et al. reference that provides a teaching that anything other than a strictly linear path of the x-ray

source and the radiation detector is intended. The illustrations in Figures 3 and 5 are merely intended to show that the x-ray source and the radiation detector can be aligned relative to each other at the respective positions so that a connecting line between the x-ray source 1 and the radiation detector 2 can exhibit a non-90° angle with respect to the axis 15. In this regard, it is merely accidental that the respective schematic positions of the x-ray source 1 and the x-ray detector 2 in Figures 3 and 5 of Verdonck et al. are not precisely aligned along lines respectively parallel to the axis 15.

Nevertheless, even the slight deviations from a strictly linear path that can be seen in Figures 3 and 5 clearly do not represent a path that corresponds to or conforms to the curved shape of the spinal column. If the successive positions of the x-ray source 1 and the radiation detector 2 in Figures 3 and 4 of Verdonck et al. are connected in a "connect-the-dots" manner, clearly a long straight-line path segment would exist between the positions of the radiation detector 2 in Figure 3 associated with the projection lines 183 and 184, and the positions of the x-ray detector 2 in Figure 5 associated with the projection lines 190 and 191. These long linear straight-line paths in Figures 3 and 5 clearly do not conform to the curve of the spinal column that exists between those respective positions of the x-ray detector 2.

Aside from this accidental and unintended illustration in Figures 3 and 5, there is nothing whatsoever in the Verdonck et al. reference that discloses any structure or method steps for producing any type of curved path of the x-ray source and the x-ray detector, much less a curved path that corresponds to the curved geometry of the subject under examination. In fact, there are many statements in the Verdonck et al. reference that teach away from the generation or usage of any such curved path.

For example, it is explicitly stated in paragraph [0034] of Verdonck et al. that during the acquisition of the sub-images, the x-ray examination apparatus is controlled such that the projection line 18 is adapted to the position of the vertebra, or several vertebrae, actually being imaged. This paragraph further states that this means that the C-arm 3 will be angulated around the axis 14 and/or rotated around the patient axis 15 during the acquisition of the sub-images. It is solely this angulation or rotation that is then explicitly stated at the end of paragraph [0034] to be described "in more detail" with reference to Figures 2 to 5 of Verdonck et al. Clearly nothing in this paragraph provides any disclosure or suggestion whatsoever to move the x-ray source and the x-ray detector along a *curved* path.

Despite the fact that the non-linear illustrations of the respective positions of the x-ray source 1 and the x-ray detector 2 in Figures 3 and 5 of Verdonck et al. is clearly accidental and unintentional, Applicant recognizes that under 35 U.S.C. §102(b) a disclosure can be relied upon for whatever is contained therein. Since it is possible that the Examiner may still consider Figures 3 and 5 of Verdonck et al. as illustrating (accidentally and unintentionally) a curved path of the x-ray source or the x-ray detector that conforms, in a small portion thereof, to the curvature of an equally small portion of the spinal column of the subject, independent claims 1 and 13 have been amended to make clear that the examination subject exhibits a curved geometry throughout the relevant longitudinal extent thereof, and that the curved path, along which the x-ray source and the x-ray detector are moved, is substantially coextensive with this longitudinal extent, in addition to substantially conforming to the curved geometry of the subject. This precludes, under any interpretation, the Verdonck et al. reference from anticipating independent claims 1 and 13 because, at

best, the discrete positions of the x-ray source 1 and the x-ray detector 2 shown in the Verdonck et al. reference clearly do not define a curve that conforms to the geometry of the spinal column substantially along the entire extent of the spinal column.

The Verdonck et al. reference therefore, does not disclose all of the elements of independent claims 1 and 13, and thus does not anticipate either of those claims. Claims 2-12 add further steps to the novel method of claim 1, and claims 14-25 add further structure to the novel combination of claim 1, and therefore none of those dependent claims is anticipated by Verdonck et al. for the same reasons discussed above in connection with claims 1 and 13.

As separate arguments in support of the patentability of claims 7 and 23, however, Applicants submit that, in view of the complete absence in Verdonck et al. of any intentional curvature of the paths of the x-ray source and the x-ray detector, the Verdonck et al. reference clearly does not disclose or suggest the storage and use of a customized curve set for accomplishing the curved path of the x-ray source and the x-ray detector, as set forth in claims 7 and 23.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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